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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,816	01/16/2004	Michael W. Murphy	8540G-000233	6583

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EXAMINER
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YUAN, DAH WEI D

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/758,816

Applicant(s)

MURPHY ET AL.

Examiner

Dah-Wei D. Yuan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**ULTRA SHORT HIGH PRESSURE GRADIENT FLOW PATH FLOW FIELD**

Examiner: Yuan

S.N. 10/758,816

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November 2, 2006

**Detailed Action**

1. The Applicant's Request for Reconsideration filed on September 7, 2006 was received.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on May 11, 2006.

***Claim Rejections - 35 USC § 102***

3. The claim rejections under 35 U.S.C. 102(e) as being anticipated by Morse et al. (US 6,960,403 B2) on claims 1-9 are maintained. The rejection is repeated below for convenience.

With respect to claims 1,7, Morse et al. teach a fuel cell comprising polyimide perform laminate (which contains microfluidic interconnect ferrules (217) (gas-impermeable elements) and an active element (204,209). Each of the plurality of the spacer and the first gas impermeable element have orifices (222,223) therethrough. A flow path is established from the first manifold through the orifices over the active element to the second manifold as shown in the microfluidic fuel cell package (218). See Column 3, Line 66 to Column 4, Line 17; Figure 2.

With respect to claim 2, Morse et al. further teach the metallization to form resistive heating elements for direct control of the MEA temperature and feed through electrical connections to extract the generated electrical power from the fuel cell. A wide variety of metals can be used for conductive wires embedded as feed through to extract the electrical power from the fuel cell electrodes. See Column 4, Lines 18-41.

With respect to claim 3, the plurality of resistive heating elements (206) are electrically conductive. See Column 4, Lines 57-67.

With respect to claim 4, Morse et al. teach the use of conductive wires (fillers) embedded as feedthroughs to extract the electrical power from the fuel cell electrodes. See Column 4, Lines 18-41.

With respect to claim 5, the first manifold is substantially parallel with the second manifold. See Figure 2.

With respect to claim 6, the second plurality of spacer (217) disposed in the second manifold. See Figure 2.

With respect to claim 8, a frame is disposed between the first gas I permeable element and the second gas impermeable element. See Figure 2.

With respect to claim 9, the spacers spaced on the first gas impermeable element within the first manifold. See Figure 2.

#### ***Response to Arguments***

4. Applicant's arguments filed on September 7, 2006 have been fully considered but they are not persuasive.

*Applicant's principle arguments are*

*Morse et al. fail to disclose a flow path is established from said first manifold through said orifice over said active element to said second manifold.*

In response to Applicant's arguments, please consider the following comments.

Applicant is correct in pointing out the relative position of the first manifold and second manifold. The term "manifold" in claim 1 is understood as a structure that directs a fuel or air to or receives the exhaust gases from the membrane electrode assembly. This can be further supported in the disclosure of Morse reference wherein the anode (fuel) manifold comprising (a) a fourth layer fuel inlet communicating with the fuel feedthrough, (b) a porous membrane, and (c) a fourth layer fuel outlet. See Column 1, Lines 34-67. The generic manifold in the claim is interpreted as any location along the structure of the manifold. The cell anode (204) is an active element as described above in paragraph 3. Therefore, the recitation "a flow path is established from said first manifold through said orifice over said active element to said second manifold" is disclosed in the Morse reference. The claim rejections based on the reference of record are proper and thus maintained.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan  
November 2, 2006



DAH-WEI YUAN  
PRIMARY EXAMINER